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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/422,378	10/21/1999	TATSUYA SHIMODA	9319T-000011	5460
7590	04/14/2004		EXAMINER	
HARNES DICKEY & PIERCE PLC P O BOX 828 BLOOMFIELD HILLS, MI 48303			WILLIAMS, KEVIN D	
			ART UNIT	PAPER NUMBER
			2854	
DATE MAILED: 04/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/422,378

Applicant(s)

SHIMODA ET AL.

Examiner

Kevin D. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11, 13-18 and 27-50 is/are pending in the application.
4a) Of the above claim(s) 45-50 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-9, 11, 13-18 and 27-44 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 21 October 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/17/2003.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 27-32, 34, and 35 is rejected under 35 U.S.C. 102(e) as being anticipated by Pannekoek (4,748,464).

Pannekoek teaches a printing device comprising a head 10 being a first rotary drum placed in a position so that the head forms an electric field towards an electronic paper, a plurality of pixels 2,4 formed on a curved part of a surface of the head 1, the surface of the drum forms the curved part said plurality of pixels are two-dimensionally arranged on the curved part and actuated independently forming an electric field while the first drum is rotating, a plurality of first electrodes 2,4 each corresponding to a respective pixel, a second electrode 12 being a second rotary drum and opposing the first drum, and a mechanism for rotating at least one of the first rotary drum and the second rotary in a direction opposite to the direction that the other drum rotates.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 8, 9, 11, 13-16, 27-32, 34, 35, 37-40, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vincent (5,866,284) in view of Pannekoek.

With respect to claims 1-5, 8, 9, 11, 13-16, 37-40, and 42-44, Vincent teaches a printing system comprising a plurality of capsules 100 that are caused to move by applying an electric field, a drum-shaped describing head 210 having a curved shape with a surface for holding an electric charge, a pair of drums 210,250, another drum having on an outer circumferential surface a common electrode that form an electric field together with said surface of the drum-shaped head, and an erasing head 230, and at least one of a portion of said describing head and a portion of said erasing head that contacts said electronic paper includes the curved part.

With respect to claims 37-40 specifically, Vincent teaches a first drum head 230 that forms an electric field for resetting a pre-written pattern, and a second drum head 210 that writes a pattern.

With respect to claims 27-32, 34, and 35, Vincent teaches an electronic paper printing device comprising a first rotary drum 210 having a curved part on a surface of a drum, a second electrode 250 opposing the first drum, and a mechanism for rotating at least one of the first rotary drum and the second rotary drum in opposite directions.

Vincent does not teach a drum-shaped head having on an outer circumferential surface a plurality of pixel electrodes formed on a curved part of a surface of said head, the plurality of pixel electrodes being two-dimensionally arranged on the curved part and

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actuated independently to form electric fields, the pixel electrodes being deployed in a matrix that form electric fields, one of the first and second heads comprising a plurality of electrodes, each of the electrodes corresponding to a respective pixel, and each of the pixels independently forming an electric field while the first rotary drum is rotating.

Pannekoek teaches a drum-shaped head 10 having on an outer circumferential surface a plurality of pixels electrodes 2,4 formed on a curved part of a surface of a head 1, the plurality of pixel electrodes being two-dimensionally arranged on the curved part and actuated independently (3;col. 3, lines 3-5) to form electric fields, the pixels being deployed in a matrix that form electric fields, one of the first and second heads comprising a plurality of electrodes 4, each of the electrodes corresponding to a respective pixel, and each of the pixels independently forming an electric field while the first rotary drum is rotating.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vincent to have the pixel electrodes on the outer circumference of the drum as taught by Pannekoek, in order to more accurately control the images areas, since the electric field on a particular point on the drum can be changed up until the moment right before that point touches the paper. In the Vincent device the field can not be changed on a particular point once that point passes the corona charger.

5. Claims 6, 7, 17, 18, 33, 36, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vincent in view of Pannekoek as applied to claims 1-5, 8, 9, 11, 13-16, 27-32, 34, 35, 37-40, and 42-44 above, and further in view of Haas et al. (6,100,909).

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Vincent in view of Pannekoek teaches the claimed invention except for the plurality of switching elements.

Haas teaches a paper printer comprising a plurality of switching elements.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vincent in view of Pannekoek to have the plurality of switching elements as taught by Haas, in order to accurately control the image forming process.

Response to Arguments

6. Applicant's arguments filed 1/20/2004 have been fully considered but they are not persuasive.

Applicant argues that the Pannekoek reference does not disclose that each pixel independently forms an electric field. Please note column 3, lines 3-5 which discloses that blocks 3 represent selective voltage means for selectively applying voltage to the electrodes 2 in accordance with an information pattern. Therefore, through the selective voltage means 3, each pixel 5 can be activated independently to form an electric field.

Applicant argues that there is no motivation to combine Pannekoek with Vincent. Applicant further states that the Examiner relies on a teaching in US Patent 5,389,945 which is mentioned in the disclosure of Vincent. In response to applicants' arguments, the Examiner wishes to bring to applicant's attention that the Examiner does not rely on US Patent 5,389,945 for any teaching of the claimed limitations. The Examiner relies on a portion of the Vincent reference, column 2, lines 8-30, for motivation to combine Pannekoek with Vincent. This portion of the Vincent reference mentions the '945 patent as a part of a discussion where Vincent states that pixel electrodes can be used to

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provide a localized field for creating images on re-writable media. Vincent goes on the mention some of the advantages and disadvantages of using pixel electrodes as opposed to the corona discharger used in the invention of the Vincent reference.

Vincent teaches two drums which function in conjunction with a corona charger to produce a localized field for creating images on re-writable media. In view of the teaching by Vincent that pixel electrodes can be used with re-writable data, one of ordinary skill in the art would be inclined to modify Vincent to have the drum and pixels of Pannekoek, in order to realize the apparent advantages outlined by Vincent in column 2, lines 8-30.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin D. Williams whose telephone number is (571) 272-2172. The examiner can normally be reached on Monday - Friday, 8:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H. Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KDW
April 8, 2004

Charles H. Nolan, Jr.
Primary Examiner
Tech Center 2800